

WHAT IS CLAIMED IS:

Sub B 5 1. A non-reciprocal circuit device comprising a plurality of central conductors overlapping with electric insulation from each other at a predetermined angle, a magnetic body disposed in contact with or close to said central conductors, matching capacitors, a permanent magnet disposed for applying a DC magnetic field to said central conductors and said magnetic body, and metal cases for receiving these parts and serving as a magnetic yoke, at least said matching capacitors being integrally constituted in a laminate module having a substantially flat lower surface, 10 and said laminate module being disposed on a substantially flat surface of a composite base comprising an insulation member and conductor plates.

2. The non-reciprocal circuit device according to claim 1, wherein said composite base comprises a ground electrode connected to said central conductors and said capacitors of said laminate module and terminal 15 electrodes connected to said central conductors and said capacitors of said laminate module on the same plane, said ground terminals connected to said ground electrode and said input/output terminals connected to said terminal electrodes being provided as external terminals on side surfaces and/or a lower surface of said laminate module.

20 3. The non-reciprocal circuit device according to claim 1, wherein said laminate module has a ground electrode for connecting said capacitors to a ground on a substantially entire lower surface thereof, said ground electrode of said laminate module being disposed directly on a substantially entire upper surface of a ground electrode of said composite base and 25 electrically connected thereto, and said ground electrode of said composite base being disposed directly on a lower metal case and electrically connected thereto.

4. The non-reciprocal circuit device according to claim 1, wherein

said composite base is a resin-conductor composite base comprising conductor plates having an electric resistance of $5.5 \times 10^{-8} \Omega \cdot m$ or less integrally molded with an insulating thermoplastic resin.

5. The non-reciprocal circuit device according to claim 4, wherein
5 terminal electrodes and at least one input/output terminal are integrally formed by the same conductor plate in said resin-conductor composite base.

6. The non-reciprocal circuit device according to claim 4, wherein a ground electrode and at least one ground terminal are integrally formed by the same conductor plate in said resin-conductor composite base.

10 7. The non-reciprocal circuit device according to claim 4, wherein said ground electrode and said terminal electrodes of said resin-conductor composite base have contact surfaces in the same plane.

8. The non-reciprocal circuit device according to claim 4, wherein said resin-conductor composite base has a means for positioning said
15 laminate module on a flat upper surface thereof.

9. The non-reciprocal circuit device according to claim 1, wherein said electrode patterns in said laminate module are connected through via-electrodes and/or side-surface electrodes.

10. The non-reciprocal circuit device according to claim 1, wherein
20 said central conductors are formed in an integral central conductor laminate comprising a plurality of ceramic sheets having central conductor patterns.

11. The non-reciprocal circuit device according to claim 10, wherein said ceramic sheet is made of a magnetic ceramic.

12. The non-reciprocal circuit device according to claim 10, wherein
25 said electrode patterns in said central conductor laminate are connected through via-electrodes and/or side-surface electrodes.

13. The non-reciprocal circuit device according to claim 1, wherein said central conductors are bent along an outer surface of said magnetic

body, and insulation films are disposed between said central conductors in their crossing portions.

14. The non-reciprocal circuit device according to claim 1, wherein said central conductors and said magnetic body are formed by an integral laminate comprising a plurality of ceramic sheets having central conductor patterns.

15. The non-reciprocal circuit device according to claim 14, wherein said ceramic sheet is made of a magnetic ceramic.

16. The non-reciprocal circuit device according to claim 1, wherein at least a lower case of said metal cases is formed by an integral laminate of a metal having as high saturation magnetic flux density as 0.6 T or more clad with a high-conductivity metal having an electric resistance of $5.5 \times 10^{-8} \Omega \cdot m$ or less, whereby said lower case serves as an electrically conductive magnetic yoke.

17. A wireless communications equipment comprising a non-reciprocal circuit device, a transmission circuit, a reception circuit, and an antenna, said non-reciprocal circuit device comprising a plurality of central conductors overlapping with electric insulation from each other at a predetermined angle, a magnetic body disposed in contact with or close to said central conductors, matching capacitors, a permanent magnet disposed for applying a DC magnetic field to said central conductors and said magnetic body, and metal cases for receiving these parts and serving as a magnetic yoke, at least said matching capacitors being integrally constituted in a laminate module having a substantially flat lower surface, and said laminate module being disposed on a substantially flat surface of a composite base comprising an insulation member and conductor plates.

18. The wireless communications equipment according to claim 17, wherein it is a cellular phone.